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ABSTRACT

Preservice teachers need to be prepared for their roles as researchers and consumers of research. Four ways by which methods instructors can interest preservice teachers in research are: (1) selecting potentially useful findings and publishing them in journals of interest to prospective teachers; (2) assigning analysis of research papers; (3) creating situations which provide opportunities for citing and applying research findings; and (4) involving students in research. The benefits derived from involving student teachers in research increase when the whole methods class focuses on the same topic. "Shadowing" a pupil for a whole term, including participation in the pupil's classes, interviews with the pupil and with significant others (teachers, peers, parents), and examining samples of school work have proved to be useful techniques. The paper is based on reports submitted by 20 biology student teachers, half Jewish and half Arab. Benefits are classified in terms of the types of knowledge (e.g., pedagogical, curricular, pupil characteristics) gained by carrying out the research. (IAH)

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WHAT BENEFITS CAN BE DERIVED FROM THE INVOLVEMENT OF STUDENT TEACHERS IN RESEARCH?
EFFECTIVE INTRODUCTION OF RESEARCH INTO PRESERVICE TEACHER EDUCATION

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Abstract

The benefits derived from involving student teachers in research increase when the whole class focusses on the same topic. "Shaddowing" a pupil for a whole term, including participation in the pupil's classes, interviews with the pupils and with significant others (teacher, peers, parents) and examining samples of school work, proved to be a very useful assignment. The paper is based on reports submitted by twenty biology student teachers, half Jewish and half Arabs, and is rich in citations of both pupils and student teachers. Benefits are classified in terms of the types of knowledge (e.g. pedagogical, curricular, pupil characteristics) gained by carrying out the research.

The Problem

Low interest and little faith

Relatively few teachers are interested in educational research. Following are some reasons which may account for that world-wide phenomenon:

1. Teachers as practitioners have little faith in theory which is generated by university professors who sit in their ivory towers detached from the reality of life in the classroom.

2. Research articles are often written in a language and style which do not "speak" to the teachers and consequently appear to be irrelevant to the needs and concerns of the teachers.

3. It is not easy to translate findings of educational research into generalized practical "do it" recommendations because of the strong effect of context and personal variables on teaching and learning.

4. Many studies published in educational journals deal with marginal issues and are indeed of little value to the daily work of teachers.

High expectations

At the same time, there is a world-wide movement towards relegating more responsibilities and more decision making power to teachers. Teachers' autonomy is characterized by phrases such as "teachers as curriculum planners" (Connelly and Clandinin, 1988) and "teachers as researchers" (Elliott, 1988). If indeed teachers are expected to play such roles as curriculum planners and researchers then they need adequate preparation.

Low involvement of teacher educators in research

Many teacher educators do not do any research (Howey and Zimpher, 1990). A large proportion is alienated to research and see it as taking time away from high quality teaching. Preservice courses are designed predominantly on the basis of the personal beliefs and experiences of teacher educators. Research based activities in preservice education are rare. As a result of the negative attitudes of teacher educators, student teachers are often not introduced to educational research. At

best, they hear and read about research in psychology, sociology and philosophy of education, an experience which helps to further enhance their suspicions about the relevance and validity of theory and research to the teaching profession. Unfortunately, many teacher educators fail to recognize the potential contribution of research for their own professional development as well as to that of their student teachers.

Purpose of article

The preparation of teachers for their roles as curriculum consumers and planners was discussed in a number of publications (e.g. Silberstein and Tamir, 1986; Connelly and Clandinin, 1988). The purpose of the present paper is to deal with the preparation of preservice teachers to their roles as research consumers and researchers. Since any such preparation involves teacher educators, possible actions that might be taken by teacher educators and some benefits that may be associated with these activities for both teacher educators and student teachers will be described as well.

Becoming a wise research consumer

There are at least four ways to interest student teachers in research findings and increase the probability of persuading them to become regular consumers and possible candidates for applying such findings in their work as teachers. These are briefly described below:

1.Publishing research which appeals to teachers

Selecting potentially useful findings and publishing them in special publications, the language and style of which have been adjusted to the needs, interests and capabilities of teachers. Examples of such publications are Budd Rowe (1978), Harms and Yager (1981), Kyle et al (1985), and Yager (1982). One of the strongest claims for qualitative research such as that based on narrative inquiry (Connelly and Clandinin, 1990) is its being meaningful to teachers. I am not aware of studies that attempted to find out for both kinds of publications to what extent they have been read by classroom teachers, to what extent they have affected educational practice and with regard to our immediate interest, to what extent and to what effect they have been used in preservice education.

2. Analysis of a research paper

Method courses can be enriched by attending to research published in professional journals as well. In the biology method course that I have taught for many years, I have always included an assignment which requires the student teachers to browse through the science education journals in the library, to choose a research paper that interests her or him, to read and analyze the paper

through the use of given criteria and to present a written report of the analysis. Finally, one class session is devoted to brief (5 to 7 minutes) presentations of summaries by each student teacher to the whole class. More details about this assignment and its effectiveness are reported elsewhere (Tamir, 1989).

3. Creating and capitalizing on adequate contexts

Another way of using research findings, so that they carry meaningful messages to student teachers, is to create situations which provide opportunities for citing and applying such research findings. For example, an analysis of a lesson given by a group of student teachers, observed by the class and videotaped, offers a variety of such opportunities (see Tamir, 1988). Perhaps one of the student teachers fails to behave consistently in assigning turns to pupils and the class discussion is dominated by a few male pupils. In a case like this, the instructor initiates a discussion about ensuring equal opportunities to all pupils to participate in class and what research has to say about effective ways of assigning turns. Similarly, if a student teacher happens to "fire" questions one after the other, without providing the students with enough time to think about answers, then it will be a good opportunity to raise the issue of "wait time" and discuss the relevant research findings. The argument here is that research findings presented in context carry much more meaningful messages than otherwise, especially to novices with limited prior experience.

4. Involvement in research

Finally, like in many other human endeavors, active involvement in research is a good way of learning to appreciate the potential value of research.

Becoming involved in research

Teachers are researchers of sort

I have already mentioned the potential positive effect of being involved in research on becoming an interested consumer of research findings. However, the major reason for involving student teachers in research is to prepare them for a life-long career of a teacher as inquirer and researcher. Phrases like "teachers as researchers", or "action research" (e.g. Elliott, 1988) may be new. However, it may be observed that any teacher who is struggling to maintain high quality teaching is continuously engaged in endless trials and informal experiments on the basis of which he or she constructs their personal theories which guide their teaching (e.g. Elbaz, 1983). At the same time, many teachers have difficulty reflecting on their classroom events and consequently do not learn from their past experiences. How can we help these teachers?

A guided introduction

For both kinds of teachers as well as for the many who occupy intermediate positions between the two extremes, significant benefits can be expected from more guided involvement in research. This is certainly true for novices. Following are two cases which illustrate how such guided involvement can be incorporated in a methods course.

The case of students' alternative frameworks

Let us take, for example, the issue of preconceptions and misconceptions. It is generally agreed that finding out what the student knows and teach him accordingly (Ausubel, 1968) is a useful approach. Research in this area has proliferated, especially in the sciences. It is possible to assign readings which describe a variety of students' misconceptions. Nevertheless, there are many more concepts for which this information is not available. Moreover, even with concepts that have been studied, there is a need for the teacher to diagnose his or her own students' conceptions since a great variation may exist between students with different backgrounds.

Hence, the study of students' conceptions is a very useful research experience for any teacher. I have found that the best way for student teachers, for whom this is often their first experience in doing educational research, is to carry out a structured study using research procedures prescribed by the instructor. For example, one year my student teachers were asked to study how junior high pupils conceive "living - non-living". The research method was an interview. Each student teacher was equipped with a set of pictures which included various animals, plants and inanimate objects. In the first part of the interview, the interviewer showed the pupil the pictures one at a time, asking, "Is this living or non-living?". The pupil's answer was recorded on a prepared sheet and then followed the questions : "How do you know?" "How have you decided?". Again the answers were recorded on the sheet. The analysis of the collected data was guided as well. Each student teacher wrote her or his own report. In addition, it was possible to pool the data collected by all the student teachers and analyze them both statistically and qualitatively. The results have been published in a professional journal (Tamir et al, 1981). Similar studies were conducted and published in subsequent years on students' conceptions of "osmosis" (Friedler et al, 1987) and of "a limiting factor" (Amir and Tamir, 1989).

The case of "shadowing"

Another potentially useful topic for student teachers' research is case studies of individual pupils. In 1989, 20 student teachers enrolled in my biology method course participated in such a study. Each student teacher selected a secondary school pupil in a school of his or her choice who agreed to be followed for a whole term. The "shadowing:" process (Note 1) included participant

observations in at least 10 class periods of which two had to be laboratory lessons, conversations with the target pupil, the biology teacher, the principal, the parents, peers and any other available source. The written report included description of the school of the target pupil, the school laboratory, the teacher, the target pupil and his or her home background, the subject matter and how it was taught in each of the 10 lessons observed, the homework, the tests, report of conversations, a comparison with the student teacher's experiences while he or she studied in that class level, and a critical discussion of the findings and their implications.

The attitudes of student teachers toward the research assignment

The attitudes of the student teachers toward their research assignments have always been positive. However, I found that the attitudes toward the "shadowing" assignment were especially positive. Following are some responses in the words of the student teachers:

- "The study made me think about methods of instruction, what are the pupil's problems and how he views school biology"
- "This is perhaps my last chance to view school biology from the perspective of the pupils"
- "I learned how to deal with weak pupils, how to encourage them on a personal basis, rather than fail them"
- "It helped me see how the young pupils work under pressure, what some of their problems are, and how all these affect their learning"
- "I had an opportunity to compare the views of the pupil, her parents, her peers and her teacher and identify discrepancies between the different views"
- I learned about the difficulties encountered by pupils, their interests and preferences. I wish I would be able to see all these when I become a teacher so that my lessons will be interesting, meaningful and challenging"
- "I wish I shall not be like the teacher I observed who ignored the interests of the pupils and did not do anything to improve the atmosphere in class. Why didn't she try to use a variety of instructional strategies?"
- "This study was especially useful because it gave me an opportunity to observe the actual classroom transactions rather than read about them"
- "It opened my eyes especially to the way the teacher handled discipline problems"
- "The conversation with the parents helped me a lot to understand the pupil's behavior in class"
- I was impressed by the complexity of classroom events and how the teacher has to cope with so many things simultaneously"

- "I found that by paying personal attention to my pupil and showing him that I care about him, he has changed his attitude toward the study of biology, started to participate in class and became a much better pupil"
- "Unlike many other assignments, this project gave me the opportunity to have direct contact with a pupil. I highly recommend this assignment to future generations of student teachers since it was so interesting to do as well as due to its contribution to my professional development"

The benefits from the research assignment

There are four potential beneficiaries from the assignment of a research project as a partial requirement in a preservice method course: student teachers, teacher educators, pupils and regular clientele of educational research. We shall discuss each of these in turn.

Student teachers

For them, the contribution of the assignment is three-fold. First, it provides them with an initial experience in conducting educational research; second, it enriches their educational experiences by obtaining an indepth view of a particular educational issue; and third, in increases their appreciation of research and its potential contribution to the teaching practice.

Teacher educators

As already mentioned, many teacher educators do not do any research. Hence, research productivity of teacher educators, is on the average, quite low. According to a recent survey in the U.S.A., more than half of the faculty in bachelor and masters - granting institutions had no published refereed articles. Faculty in bachelor - granting institutions reported on the average 2, in masters - granting institutions 3, and in doctoral - granting institutions 13 publications in refereed journals (AACTE, 1988). It is hypothesized that if teacher educators will incorporate into their method courses assignments such as those described in this article, they will be engaged in research within their field of expertise, will gain important knowledge and, as well, will meet the promotion criteria operating in many teacher education institutions. Projects such as those described may involve the cooperating teachers who may benefit from them as well.

Pupils

Pupils will benefit by having more open-ended and inquiry-oriented teachers who are ready to try new approaches, learn from experience and consequently improve teaching.

The regular clientele of research

Since research carried out by student teachers costs little if any money, a wealth of research findings relevant to classroom practices will become available.

Conclusion

I have suggested various ways which can be incorporated into preservice teacher education. It should be noted that the activities suggested aim at introducing prospective teachers to educational research. Here, like in other aspects of the profession, the preservice experiences are just a beginning. The long-term impact of such activities requires further research.

Notes

Note 1: The term "shadowing" was suggested by Elliott Eisner (personal communication).

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